

IN THE CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the subject application:

1. - 15. (Canceled)

16. (Currently amended) A mass spectrometer comprising:

an ion source for producing ions;

a pulser;

a mass analyzer; and

a traveling field device for transporting ions along a path from said ion source to said mass analyzer, said device having a traveling field voltage applied to at least a part of said device.

17. (Previously presented) A mass spectrometer according to claim 16, wherein said device comprises a plurality of coaxial apertured diaphragms.

18. (Previously presented) A mass spectrometer according to claim 17, wherein at a first end of said device a distance between each of said apertured diaphragms is smaller than at a second end of said device.

19. **(Previously presented)** A mass spectrometer according to claim 17, wherein at a first end of said device a size of apertures of said apertured diaphragms is smaller than at a second end of said device.

20. **(Previously presented)** A mass spectrometer according to claim 16, wherein said traveling field voltage has an even number of rotational phases having equal angle of rotation spacings.

21. **(Previously presented)** A mass spectrometer according to claim 16, wherein an RF voltage is superimposed over said traveling field voltage.

22. **(Previously presented)** A mass spectrometer according to claim 21, wherein said RF voltage is a two-phase RF voltage.

23. **(Previously presented)** A mass spectrometer according to claim 16, wherein a damping gas is provided in said traveling field device to reduce oscillations of said ions in said device.

24. **(Previously presented)** A mass spectrometer according to claim 16, wherein said traveling field device is capable of trapping said ions for a predetermined length of time.

25. **(Previously presented)** A mass spectrometer according to claim 16, wherein said traveling field voltage comprises four, six or eight phases.

26. **(Currently amended)** A mass spectrometer comprising:

an ion source for producing sample ions;

a filter for receiving said sample ions from said ion source and selecting certain of said sample ions;

a traveling field device comprising a plurality of coaxial diaphragms; and

an analyzer including a detector for detecting said sample ions;

a pulser for packaging said selected ions;

wherein a traveling field voltage and a superimposed two-phase RF voltage are applied

along said diaphragms, and

wherein said traveling field device transports said selected ions from said filter to said analyzer.

27. **(Canceled)** A mass spectrometer according to claim 26, wherein said mass spectrometer further comprises a pulser for packaging said selected ions.

28. **(Currently amended)** A mass spectrometer according to claim ~~[[27]]~~ 26, wherein said mass spectrometer further comprises an ion reflector for reflecting ions received from said pulser onto a path toward said deflector.

29. **(Currently amended)** A mass spectrometer according to claim ~~[[27]]~~, 26 wherein said selected ions are continuously injected into said pulser.

30. **(Previously presented)** A mass spectrometer according to claim 26, wherein said mass spectrometer is capable of trapping said ions for a predetermined length of time.

31. **(Currently amended)** A mass spectrometer comprising:
a traveling field ion guide having a plurality of coaxial apertured diaphragms with a first alternating voltage alternately superimposed over a second alternating voltage; and
a pulser.

32. **(Previously presented)** A mass spectrometer according to claim 31, wherein said first alternating voltage is a two-phase RF voltage.

33. **(Previously presented)** A mass spectrometer according to claim 31, wherein said second alternating voltage is a multiphase low-frequency voltage.

34. **(Previously presented)** A mass spectrometer according to claim 31, wherein a voltage generator provides sequential rotational phases of said second voltage to said apertured diaphragms.

35. **(Previously presented)** A mass spectrometer according to claim 31, wherein said second voltage comprises rotary phases having an equal angle of rotation spacings.--